

What is claimed is:

1. A plasma display panel with a color space transformation device, comprising:

5 a digital board comprising a color space transformation device, the digital board receiving image display signals and processing the image display signals, the color space transformation device transforming a color space of the plasma display panel into a transformed color space of the plasma display panel according to a specification of the image display signals and transforming the image display signals
10 into transformed image display signals according to the transformed color space of the plasma display panel;

 a display control circuit connected to the digital board to receive the transformed image display signals from the digital board and generate control signals;
and

15 a color plasma display panel receiving the control signals and the transformed image display signals, and displaying the transformed image display signals on the color plasma display panel with the transformed color space according to the control signals.

20 2. The plasma display panel with a color space transformation device of claim 1, wherein the digital board comprises:

 a microprocessor unit receiving a user selection signal and issuing a request to change the color space of the plasma display panel according to the user selection signal; and

25 an image processor coupling with the microprocessor unit to receive the request

and the image display signals and transfer the request and the image display signals to the color space transformation device.

3. The plasma display panel with a color space transformation device of claim 2,
5 wherein the digital board further comprises a de-contouring processing device coupling between the color space transformation device and the display control circuit to process the transformed image display signals with an error diffusion method to enhance a resolution of the transformed image display signals.

10 4. The plasma display panel with a color space transformation device of claim 1, wherein the specification of the image display signals comprises a National Television System Committee (NTSC) specification.

15 5. The plasma display panel with a color space transformation device of claim 1, wherein the specification of the image display signals comprises a European Broadcasting Union (EBU) specification.

6. The plasma display panel with a color space transformation device of claim 1, wherein the display control circuit further comprises:

20 a scan sustainer coupling between the digital board and the color plasma display panel;

a scan driver integrated circuit coupling between the scan sustainer and the color plasma display panel;

25 a bulk sustainer coupling between the digital board and the color plasma display panel, wherein the scan sustainer, the scan driver integrated circuit, and the bulk

sustainer generate the control signals to control the color plasma display panel; and
a data driver integrated circuit coupling between the digital board and the color plasma display panel to receive the transformed image display signals and transmit to the color plasma display panel.

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7. The plasma display panel with a color space transformation device of claim 1, wherein the digital board further comprises a timing controller to provide timing signals for the digital board and the display control circuit.

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8. The plasma display panel with a color space transformation device of claim 1, wherein the color plasma display panel further comprises a surface filter to filter a reddish orange light generated by a gas discharge.

9. A color space transformation method comprising:

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obtaining a video signal specification;

measuring a color space of a plasma display panel;

calculating deviations between the color space of the plasma display panel
and a specification color space of the video signal specification;

forming a color space transformation matrix;

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providing image display signals;

transforming the color space of the plasma display panel into a transformed
color space according to the color space transformation matrix;

modifying the image display signals to fit the transformed color space; and

displaying the modified image display signals on the plasma display panel.

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10. The color space transformation method of claim 9, wherein after the step of displaying the modified image display signals on the plasma display panel further comprises a step of enhancing the modified image display signals with an error diffusion method.

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11. The color space transformation method of claim 9, wherein the video signal specification comprises a National Television System Committee (NTSC) specification.

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12. The color space transformation method of claim 9, wherein the video signal specification comprises a European Broadcasting Union (EBU) specification.

13. The color space transformation method of claim 9, wherein the plasma display panel further comprises a surface filter to filter a reddish orange light generated by a gas discharge.

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14. A plasma display panel with a color space transformation device comprising:
a color plasma display panel;
a digital board, the digital board comprising:

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an image processor receiving image display signals;

a color space transformation device receiving the image display signals from the image processor, the color space transformation device transforming a color space of the color plasma display panel into a transformed color space according to a specification of the image display signals and transforming the image display

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signals to transformed image display signals for complying with the transformed color space; and

a display control circuit, the display control circuit comprising:

a scan sustainer coupling between the digital board and the color plasma display panel;

a scan driver integrated circuit coupling between the scan sustainer and the color plasma display panel;

a bulk sustainer coupling between the digital board and the color plasma display panel, wherein the scan sustainer, the scan driver integrated circuit, and the bulk sustainer generate control signals to control the color plasma display panel; and

a data driver integrated circuit coupling between the digital board and the color plasma display panel to receive the transformed image display signals and transmit to the color plasma display panel.

15. The plasma display panel with a color space transformation device of claim 14, wherein the digital board further comprises a microprocessor unit receiving a user selection signal and issuing a request to change the color space of the plasma display panel according to the user selection signal.

16. The plasma display panel with a color space transformation device of claim 15, wherein the digital board further comprises a de-contouring processing device coupling between the color space transformation device and the display control circuit to process the transformed image display signals with an error diffusion method to enhance a resolution of the transformed image display signals.

17. The plasma display panel with a color space transformation device of claim 14, wherein the specification of the image display signals comprises a National Television System Committee (NTSC) specification.

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18. The plasma display panel with a color space transformation device of claim 14, wherein the specification of the image display signals comprises a European Broadcasting Union (EBU) specification.

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19. The plasma display panel with a color space transformation device of claim 14, wherein the digital board further comprises a timing controller to provide timing signals for the digital board and the display control circuit.

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20. The plasma display panel with a color space transformation device of claim 14, wherein the color plasma display panel further comprises a surface filter to filter a reddish orange light generated by a gas discharge.